



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Vibrational Dynamics		
Module Code	UFMFJ-15-3	Level	Level 6
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Module type:	Standard		
Pre-requisites	Dynamics 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> Review of single free, forced, damped and undamped Single DOF systems</p> <p>Response to certain non-periodic forcing functions            Response to periodic forcing functions            Review of unforced multi-degree-of-freedom systems            Analysis of forced multi-degree-of-freedom using modal analysis            Analysis of non-linear systems using energy methods            Introduction to random vibration</p> <p><b>Teaching and Learning Methods:</b> Large group teaching session supported by small group tutorial sessions. Study time outside of contact hours will be spent on going through new material (via notes and videos), exercises and example problems. The learning on the module is strongly supported by the use of technology and students are encouraged to engage in this material both prior to and after class contact sessions.</p> <p>Scheduled learning includes teaching sessions and tutorials.</p>

## STUDENT AND ACADEMIC SERVICES

Independent learning includes hours engaged with essential reading and assessment preparation. These sessions constitute an average time per level as indicated in the table below. Scheduled sessions may vary slightly depending on the module choices you make.

Student contact time: 36 hours  
 Directed learning: 48 hours  
 Self-directed learning: 42 hours  
 Exam preparation: 67 hours  
 TOTAL: 150 Hours

### Part 3: Assessment

#### Component A

The interactive style of delivery leads to students receiving frequent formative feedback on their progress and hence students should be well prepared for the end of module assessment which takes the form of a 3 hour examination. E-quizzes taken in each week are an additional means of ensuring engagement in delivery.

First Sit Components	Final Assessment	Element weighting	Description
In-class test - Component B		20 %	E-quizzes
Examination - Component A	✓	80 %	End of semester examination - 3 hours
Resit Components	Final Assessment	Element weighting	Description
In-class test - Component B		20 %	E-quizzes
Examination - Component A	✓	80 %	Examination 3 hours

### Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	Reference
	Demonstrate knowledge of scientific principles and methods necessary to underpin their education in mechanical and related engineering disciplines, to enable appreciation of its scientific and engineering context and to support their understanding of future developments and technologies.	MO1
	Demonstrate knowledge of mathematical principles necessary to underpin their education in mechanical and related engineering disciplines and to enable them to apply mathematical methods, tools and notations proficiently in the analysis and solution of engineering problems.	MO2
	Apply and integrate knowledge of other engineering disciplines to support the study of mechanical and related engineering disciplines	MO3
	Use engineering principles and apply them to analyse key engineering processes.	MO4
	Identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques	MO5
	Apply quantitative methods to mechanical and related engineering disciplines, to solve engineering problems	MO6
	Demonstrate an ability to apply a systems approach to engineering problems	MO7

## STUDENT AND ACADEMIC SERVICES

Contact Hours	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	114
	<b>Total Independent Study Hours:</b>	114
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	36
	<b>Total Scheduled Learning and Teaching Hours:</b>	36
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p><a href="https://uwe.rl.talis.com/modules/ufmfxj-15-3.html">https://uwe.rl.talis.com/modules/ufmfxj-15-3.html</a></p>	

### Part 5: Contributes Towards

This module contributes towards the following programmes of study: